

List of Claims

1. (currently amended) A particle trap assembly comprising:
 - a filter section housing;
 - a plurality of particle traps positioned in said filter section housing, and each of the particle traps including a box defining a conduit therethrough within which a filter element is positioned;
 - at least one valve attached to said housing and being movable between a first position and a second position; and
 - a flow area to one of said particle traps being relatively large when said valve is in said first position, but being a relatively small predetermined ~~excess~~ flow area that is greater than zero when said valve is in said second position.
2. (currently amended) The particle trap assembly of claim 1 wherein each of said particle traps includes an electrically conductive filter element attached to a pair of electric terminals that each protrude through a side of the box and a wall of said filter section housing such that the electric terminals are exposed outside said filter section housing but not inside the filter section housing.
3. (currently amended) The particle trap assembly of claim 1 ~~including a~~ plurality of subassemblies that each include a plurality of stacked particle traps and one quadrant of said filter section housing; and
each of said subassemblies being detachably attached to two other subassemblies at contacting flanges.
4. (currently amended) The particle assembly of claim 3 including an inlet section and an outlet section connected to opposite ends of said filter section housing; and
wherein said particle traps divide said filter section housing into an upstream volume and a downstream volume, and said upstream volume has ~~with~~ a flow area that is about equal to a flow area of ~~a~~ said downstream volume.

5. (cancelled)

6. (currently amended) The particle trap assembly of claim 3 wherein said box of each of said particle traps has a long dimension that deviates from a straight line that terminates in end sides positioned adjacent an outer wall of said filter section housing.

7. (currently amended) The particle trap assembly of claim 3 wherein said stacked particle traps are separated and electrically isolated from one another by ceramic mats.

8. (currently amended) A particle trap assembly comprising:
a filter section housing having ~~an inlet separated from an outlet by~~ a plurality of flow paths;

a least one particle trap separating an upstream portion of one of said flow paths from a downstream portion;

a plurality of valves attached to ~~said housing~~ an inlet section, and each being operable to open and close a selected one of said flow paths;

a plurality of cross flow passages disposed in said filter section housing and fluidly connecting different pairs of said flow paths downstream from said valves but upstream from said particle traps; and

each of said flow paths having a relatively large flow area, and each of said cross flow passages having a relatively small predetermined flow area.

9. (currently amended) The particle trap assembly of claim 8 wherein each of said particle traps includes an electrically conductive filter element attached to a pair of electric terminals that each protrude through a side of the box and a wall of said filter section housing such that the electric terminals are exposed outside said filter section housing but not inside said filter section housing.

10. (currently amended) The particle trap assembly of claim 8 including a plurality of subassemblies that each include a plurality of stacked particle traps and one quadrant of said filter section housing; and

each of said subassemblies being detachably attached to two other subassemblies at contacting flanges.

11. (currently amended) The particle assembly of claim 10 including an inlet section and an outlet section connected to opposite ends of said filter section housing; and
wherein said particle traps divide said filter section housing into an upstream volume and a downstream volume, and said upstream volume has ~~with a~~ flow area that is about equal to a flow area of a downstream volume.

12. (cancelled)

13. (currently amended) The particle trap assembly of claim 10 wherein each of said particle traps includes a box defining a conduit therethrough, and each said box has a long dimension that deviates from a straight line and terminates in end sides positioned adjacent an outer wall of said filter section housing.

14. (currently amended) The particle trap assembly of claim 10 wherein said stacked particle traps are separated and electrically isolated from one another by ceramic mats.

15. (currently amended) A method of regenerating a particle trap in a particle trap assembly, comprising the steps of:

changing a flow area to one of a plurality of particle traps from a relatively large flow area to a relatively small predetermined ~~cross~~-flow area that is greater than zero; and

regenerating the one of the particle traps at least in part by heating the one of the particle traps while supplying an oxidizer via the relatively small predetermined ~~cross~~-flow area, and the heating step includes a step of conducting electricity through an electrically conductive filter medium.

16. (currently amended) The method of claim 15 wherein said changing step includes a step of closing a valve; and

the supplying step includes supplying exhaust gas via a cross-flow passage located downstream from the valve but upstream from the particle traps.

17. (currently amended) The method of claim 16 wherein said heating step includes a step of sequentially energizing electrical circuits associated with different ones of a plurality of stacked particle traps; and
electrically isolating the particle traps from one another.

18. (currently amended) A particle trap assembly comprising:
a filter section housing;
an inlet section and an outlet section connected to opposite ends of said filter section housing;
at least one particle trap with an electrically conductive filter element dividing said filter section housing into an upstream volume and a downstream volume, and each electrically conductive filter element being electrically connected to a separately energizable electric circuit; and
said upstream volume having a flow area about equal to a flow area of said downstream volume.

19. (currently amended) The particle trap assembly of claim 18 wherein each of said at least one particle trap includes a box defining a conduit therethrough and a pair of electric terminals that each protrude through a side of the box and a wall of said filter section housing such that the electric terminals are exposed outside said filter section housing but not inside said filter section housing.

20. (currently amended) The particle trap assembly of claim 18 including a plurality of subassemblies that each include a plurality of stacked particle traps and one quadrant of said filter section housing; and
each of said subassemblies being detachably attached to two other subassemblies at contacting flanges.

21. (cancelled)

22. (currently amended) The particle trap assembly of claim 20 wherein each said box of said particle traps has a long dimension that deviates from a straight line that terminates in end sides positioned adjacent an outer wall of said filter section housing.

23. (currently amended) The particle trap assembly of claim 20 wherein said stacked particle traps are separated and electrically isolated from one another by ceramic mats.

24. (new) The particle trap assembly of claim 4 having a can pressure loss coefficient on a same order as a filter pressure loss coefficient.

25. (new) The particle trap assembly of claim 24 wherein said box of each of said particle traps has a long dimension that deviates from a straight line that terminates in end sides positioned adjacent an outer wall of said filter section housing.

26. (new) The particle trap assembly of claim 25 wherein said stacked particle traps are separated and electrically isolated from one another and said filter section housing by ceramic mats.